

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Gilles Benoit et al. Art Unit : 1771
Serial No. : 10/733,873 Examiner : Andrew T. Piziali
Filed : December 10, 2003
Title : FIBER WAVEGUIDES AND METHODS OF MAKING SAME

MAIL STOP AMENDMENT

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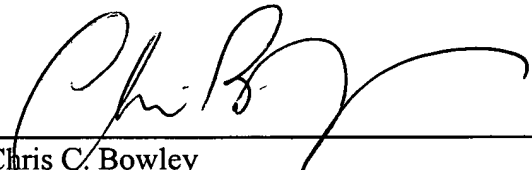
INFORMATION DISCLOSURE STATEMENT

Applicants request consideration of the references listed on the attached PTO-1449 form. Under 37 C.F.R. § 1.98 (a)(2)(ii), only copies of foreign patent documents and/or non-patent literature are enclosed. Copies of any listed U.S. patents or U.S. patent application publications can be provided upon request.

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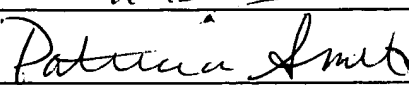
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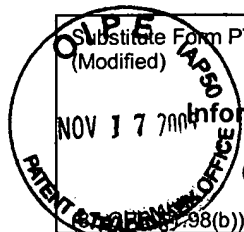
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 Substitute Form PTO-1449 (Modified) Information Disclosure Statement by Applicant (Use several sheets if necessary) 37 CFR 1.98(b)	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 13445-030001	Application No. 10/733,873
	Applicant Gilles Benoit et al.		
	Filing Date December 10, 2003	Group Art Unit 1771	

U.S. Patent Documents

Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
	AA	3,659,915	05/02/72	Maurer et al.			
	AB	4,688,893	08/25/87	Laakmann			
	AC	4,930,863	06/05/90	Croitoriu et al.			
	AD	5,497,440	03/05/96	Croitoriu et al.			
	AE	5,729,646	03/17/98	Miyagi et al.			
	AF	5,815,627	09/29/98	Harrington			
	AG	5,935,491	08/10/99	Tripathy et al.			
	AH	6,130,780	10/10/00	Joannopoulos et al.			
	AI	6,172,810	01/09/01	Fleming et al.			
	AJ	6,404,966	06/11/02	Kawanishi et al.			
	AK	6,463,200	10/08/02	Fink et al.			
	AL	6,463,200	10/08/02	Fink et al.			
	AM	2002-0164137	11/07/02	Johnson et al.			
	AN	2003-0044158	03/06/03	King et al.			
	AO	6,606,440	09/12/03	Hasegawa et al.			
	AP	6,735,369	05/11/04	Komachi et al.			

Foreign Patent Documents or Published Foreign Patent Applications

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No
	AQ	1,198,904	05/14/68	Great Britain				
	AR	EP 0 844 501	05/27/98	Europe				
	AS	WO 99/47465	09/23/99	WIPO				
	AT	WO 00/46287	08/10/00	WIPO				
	AU	WO 02/41050	05/23/02	WIPO				
	AV	WO 02/061467	08/08/02	WIPO				
	AW	WO 02/072489	09/19/02	WIPO				
	AX	WO 03/079077	09/25/03	WIPO				

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	AY	WO 03/079073	09/25/03	WIPO				

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Other Documents (include Author, Title, Date, and Place of Publication)		
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	AZ	Allan et al. "Photonic crystal fibers: effective-index and band-gap guidance." Photonic Crystals and Light Localization in the 21 st Century. 2001: Kluwer.
	AAA	Barkou et al. "Silica-air photonic crystal fiber design that permits waveguiding by a true photonic bandgap effect." Optics Letters, 24:1, Jan. 1, 1999, pp. 46-48.
	ABB	Baumeister, P. "the transmission and degree of polarization of quarter-wave stacks at non-normal incidence." Opt. Acta, 8, 1961, pp. 105-119
	ACC	Birks et al. "Full 2-D photonic bandgaps in silica/air structures." Electronic Letters, 31:22, Oct. 26, 1995, pp. 1941-1943.
	ADD	Bormashenko et al. "Development of new-near-infrared filters based on the 'sandwich' polymer-chalcogenide glass-polymer composites." Optical Engineering, 40:5, 2001, pp. 661-662.
	AEE	Bormashenko et al. "New Oriented Polymer/Thermoplastic Glass Composites for IR Optics." Engineering Materials, 10, 2000, pp. ?-?.
	AFF	Bormashenko et al. "Optical Properties and infrared optics applications of composite films based on polyethylene and low-melting-point chalcogenide." Society of Photo-Optical Instrumentation Engineers, Feb. 2002.
	AGG	Bornstein et al. "Chalcogenide Hollow Fibers." Journal of Non-Crystalline Solids, 77:8, 1985, pp. 1277-1280.
	AHH	Broeng et al. "Analysis of air-guiding photonic bandgap fibers." Optics Letters, 25:2, 2000, pp.96-98.
	AII	Cregan et al. "Single-Mode Photonic Band Gap Guidance of Light in Air." Science, 285, Sep. 3, 1999, pp. 1537-1539.
	AJJ	Dai et al. "High-peak-power, pulsed CO ₂ laser light delivery by hollow glass waveguides." Appl Optics, 36, 1997, pp. 5072-5077.
	AKK	De Sterke et al. "Differential losses in Bragg fibers." J. Appl. Phys., 76:2, Jul. 15, 1994, pp. 680-688.
	ALL	Eggleton et al. Microstructured optical fiber devices." Optics Express, 9:13, 2001, pp. 698-713.
	AMM	Feigel A. et al. "Chalcogenide glass-based three-dimensional photonic crystals." Applied Physics Letters, 77:20, pp. 3221-3223, November 13, 2000.
	ANN	Fink et al. "A dielectric omnidirectional reflector." Science, 282:5394, 1998, pp. 1679-1682.
	AOO	Fink et al. "Guiding Optical Light in Air Using an All-Dielectric Structure." Journal of Lightwave Technology, 17:11, Nov. 11, 1999, pp. 2039-2041.
	APP	Fitt et al. "Modeling the fabrication of hollow fibers: Capillary drawings." Journal of Lightwave Technology, 19:12, 2001, pp. 1924-1931.
	AQQ	Gopal et al. "Deposition and characterization of metal sulfide dielectric coatings for hollow glass waveguide." Optical Society of America, 2003. Optics Express, 11:24, Dec. 1, 2003.
	ARR	Harrington, J.A. "Infrared Fibers in Handbook of Optics." McGraw-Hill, 2001, pp. 14, 1-14, 13.
	ASS	Harrington, James. "A Review of IR Transmitting, Hollow Waveguides." Fiber and Integrated Optics, 19, 2000, pp. 211-217.
	ATT	Hart et al. "External Reflection from Omnidirectional Dielectric Mirror Fibers." Science, 296, Apr. 19, 2002, pp. 510-513.

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	AUU	Hilton, A.R., "Optical Properties of Chalcogenide Glasses." Journal of Non-Crystalline Solids, 2, 1970, pp. 28-39.
	AVV	Hongo et al. "Transmission of Kilowatt-Class Co ₂ -Laser Light through Dielectric-Coated Metallic Hollow Wave-Guides for Material Processing." Applied Optics, 31:24, 1992. pp. 5114-5120.
	AWW	Ibanescu et al. "An all-dielectric coaxial waveguide." Science, 289:5478, 2000, pp. 415-419.
	AXX	Ibanescu et al. "Analysis of Mode Structure in OmniGuide Fibers." Physical Review E, 67:4, 2003.
	AYY	John, S. "Strong Localization of Photons in Certain Disordered Dielectric Superlattices." Physical Review Letters, 58:23, 1987, pp. 2486-2486.
	AZZ	Johnson et al. "Low-loss asymptotically single-mode propagation in large-core OmniGuide fibers." Optics Express, 9:13, 2001, pp. 748-779.
	AAAA	Keck et al. "On the ultimate lower limit of attenuation in glass optical waveguides." Applied Physics Letters, 22:7, 1973, pp. 307-309.
	ABBB	King et al. "Laboratory preparation of highly pure As ₂ Se ₃ glass." J. Non-Cryst. Sol., 181, 1995, pp. 231 - 237.
	ACCC	Knight et al. "Photonic Band Gap Guidance in Optical Fibers." Science, 282, Nov. 20, 1998, pp. 1476-1478.
	ADDD	Kucuk et al. "An estimation of the surface tension for silicate glass melts at 1400°C using statistical analysis." Glass Technol., 40, 1999, pp. 149- 153.
	AEEE	Mahlein. Generalized Brewster-angle conditions for quarter-wave multilayers at non-normal incidence." J. Opt. Soc. Am., 64, 1974, pp. 647 - 352
	AFFF	Marcattilli et al. "Hollow metallic and dielectric waveguides for long distance optical transmission and lasers." Bell Syst. Tech. J., 43, 1964, pp. 1783-1809.
	AGGG	Mossadegh R. et al. "Fabrication of single-mode chalcogenide optical fiber." Journal of Lightwave Technology, 16:2, pp. 214-216, February 1998.
	AHHH	Matsuura et al. "Hollow infrared fibers fabricated by glass-drawing technique." Optics Express, 10:12, 2002, pp. 488-492.
	AIII	Matsuura et al. "Small-bore hollow waveguide for delivery of near singlemode IR laser radiation." Electronic Letters, 30, 1994, pp. 1688-1690.
	AJJJ	Maurer et al. "Fused silica optical waveguide." Corning Glass Works, 1972.
	AKKK	Mitra et al. "Nonlinear limits to the information capacity of optical fibre communications." Nature, 411, 2001, pp. 1027-1030.
	ALLL	Miyagi et al. "Design Theory of Dielectric-Coated Circular Metallic Waveguides for Infrared Transmission." Journal of Lightwave Technology, 2:2, 1984, pp. 116-126.
	AMMM	Monro, T.M. et al. "Chalcogenide Holey Fibres." Electronics Letters, 36:24, pp. 1998-2000, November 23, 2000.
	ANNN	Nishii, J. et al. "Chalcogenide glass fiber with a core-cladding structure." Applied Optics, 28: 23, pp. 5122-5127, December 1, 1989.
	AOOO	Nubling et al. "Hollow-waveguide delivery systems for high-power, industrial CO ₂ lasers." Applied Optics, 34:3, Jan. 20, 1996, pp. 372-380.
	APPP	Ouyang et al. "Comparitive study of air-core and coaxial Bragg fibers: single-mode transmission and dispersion characteristics." Optics Express, 9:13, 2001, pp. 733-747.

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	AQQQ	Pottage et al. "Robust photonic band gaps for hollow core guidance in PCF made from high index glass." Optics Express, 11:22, Nov. 3, 2003, pp. 2854-2861.
	ARRR	Renn et al. "Laser-Guided Atoms in Hollow-Core Optical Fibers." Physical Review Letters, 75:18, 1995, pp. 3253-3256.
	ASSS	Rundquist et al. "Phase-matched generation of coherent soft-X-rays." Science, 280:5368, 1998, pp. 1412-1415.
	ATTT	Sanghera et al. "Active and passive chalcogenide glass optical fibers for IR applications: a review." Journal of Non-Crystalline Solids, 257, 1999, pp. 6-16.
	AUUU	Sanghera, J.S. et al. "Development and infrared applications of chalcogenide glass optical fibers." Fiber and Integrated Optics, 19:3, pp. 251-274, March 1, 2000.
	AVVV	Sanghera, J.S. et al. "Fabrication of long lengths of low-loss IR transmitting AS40S (60-X) sex glass fibers." Journal of Lightwave Technology, 14:5, pp. 743-748, May 1, 1996.
	AWWW	Seddon, A.B. "Chalcogenide glasses: a review of their preparation, properties and applications." J. Non-Cryst. Sol., 184, 1995, pp. 44 - 50.
	AXXX	Temelkuran et al. "Wavelength-scalable hollow optical fibres with large photonic bandgaps for CO ₂ laser transmission." Nature, 420, Dec. 12, 2002, pp. 650-653.
	AYYY	Temelkuran et al. "Low-loss infrared dielectric materials system for broadband dual-rang omnidirectional reflectivity." Optics Letters, 26, 2001, pp. 1370 - 1372.
	AZZZ	Varsheneya A.K. Fundamentals of Inorganic Glasses, Academic Press, San Diego, pp. 5-7, 1994.
	AAAAA	Varshneya, A. K. "Some comments on physical properties of chalcogenide glasses." J. Non-Cryst. Sol., 273, 2000, pp. 1-7.
	ABBBB	Vienne et al. "First demonstration of air-silica Bragg fiber." Optical Society of America, 2003. Institute of Electrical and Electronics Engineers. Optical Fiber Communication Conference and Exposition Postdeadline Papers.
	ACCCC	Weber et al. Giant Birefringent Optics in Multilayer Polymer Mirrors." Science, 287, 2000, pp. 2451 - 2457.
	ADDDD	Winn et al. Omnidirectional reflection from a one-dimensional photonic crystal." Optics Letters, 23, 1998, pp. 1573 - 1575.
	AEEEE	Yablonovitch. E. "Inhibited Spontaneous Emission in Solid-State Physics and Electronics." Physical Review Letters, 58:20, 1987, pp. 2059-2062.
	AFFFF	Yeh et al. "Theory of Bragg Fiber." Journal of the Optical Society of America, 68:9, 1978, pp. 1196-1201.
	AGGGG	Yeh et al. Electromagnetic propagation in periodic stratified media. I. General theory." J. Opt. Soc. Am., 67, 1977, pp. 423 - 438.

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